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(54) Title: WATER SOLUBLE SACHET CONTAINING HARD SURFACE CLEANER

(57) Abstract: The invention relates to a water soluble container which containing concentrate composition useful for hard surface disinfecting and cleaning comprising: (a) at least one cationic surfactant having germicidal properties; (b) at least one non-ionic surfactant; (c) at least one organic solvent having a solubility in water of at least 4 %wt.; (d) optionally, at least one alkanolamine; (e) optionally, at least one polyethylene glycol; and (f) optionally, up to about 10 % wt. of one or more conventional additives selected from coloring agents, fragrances and fragrance solubilizers, viscosity modifying agents, other surfactants, other antimicrobial/germicidal agents, pH adjusting agents and pH buffers including organic and inorganic salts, optical brighteners, opacifying agents, hydrotropes, antifoaming agents, enzymes, anti-spotting agents, anti-oxidants, preservatives, and anti-corrosion agents; wherein said concentrate composition contains no more than 20 %wt. water, and desirably contains less. The water soluble containers can be made by thermoforming or injection molding. Methods for the manufacture of such containers containing the concentrate compositions and methods for the treatment of hard surfaces using the concentrate compositions and especially aqueous dilutions of the concentrate compositions are disclosed.

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AMENDED CLAIMS

[received by the International Bureau on 01 April 2004 (01.04.04); original claim 1 amended; original claim 7 cancelled; claims 8-17 renumbered as claims 7-16; claims 18-19 amended and renumbered as claims 17-18; remaining claims unchanged (5 pages)]

1. A water soluble container containing a composition comprising:

(a) 0.01 to 20%wt. of at least one cationic surfactant having germicidal properties;

(b) at least one non-ionic surfactant;

(c) at least one organic solvent having a solubility in water of at least 4%wt.;

(d) optionally, at least one alkanolamine;

(e) optionally, at least one polyethylene glycol; and

(f) optionally, up to about 10% wt. of one or more conventional additives selected from coloring agents, fragrances and fragrance solubilizers, viscosity modifying agents, other surfactants, other antimicrobial/germicidal agents, pH adjusting agents and pH buffers including organic and inorganic salts, optical brighteners, opacifying agents, hydrotropes, antifoaming agents, enzymes, anti-spotting agents, anti-oxidants, preservatives, and anti-corrosion agents;

wherein said composition contains no more than 20%wt. water.

2. The container according to claim 1 which comprises a thermoformed or injection molded water soluble polymer.

3. The container according to claim 2 wherein the water soluble polymer is poly(vinyl alcohol).

4. The container according to claim 1 wherein the concentrate composition necessarily comprises (d) at least one alkanolamine.

5. The container according to claim 1 wherein the concentrate composition necessarily comprises (e) at least one polyethylene glycol.

6. The container according to claim 1 wherein the concentrate composition necessarily comprises both (d) at least one alkanolamine and (e) at least one polyethylene glycol.

7. The container according to claim 1 wherein (b) at least one non-ionic surfactant is present in an amount of from about 0.01 to about 40 percent by weight.

8. The container according to claim 1 whererin (c) at least one organic solvent is present in an amount of from about 5 to about 97 percent by weight.

9. The container according to claim 4 wherein the (d) at least one alkanolamine is present in an amount of from about 0.01 to about 15 percent by weight.

10. The container according to claim 6 wherein the (d) at least one alkanolamine is present in an amount of from about 0.01 to about 15 percent by weight.

11. The container according to claim 5 wherein the (e) at least one polyethylene glycol is present in an amount of from about 2 to about 75 percent by weight.

12. The container according to claim 6 wherein the (e) at least one polyethylene glycol is present in an amount of from about 2 to about 75 percent by weight.

13. The container according to claim 1 wherein the concentrate composition contains no more than 15%wt. water.

14. The container according to claim 1 wherein the concentrate composition contains no more than 3%wt. water.

15. The container according to claim 1 wherein the concentrate composition contains no more than 1%wt. water.

16. The water soluble containers of the present invention substantially as described with reference to the Examples.

17. A method of preparing a dilute treatment composition comprising placing a water soluble container containing a composition comprising:

(a) 0.01 to 20%wt. of at least one cationic surfactant having germicidal properties;

(b) at least one non-ionic surfactant;

(c) at least one organic solvent having a solubility in water of at least 4%wt.;

(d) optionally, at least one alkanolamine;

(e) optionally, at least one polyethylene glycol; and

(f) optionally, up to about 10% wt. of one or more conventional additives selected from coloring agents, fragrances and fragrance solubilizers, viscosity modifying agents, other surfactants, other antimicrobial/germicidal agents, pH adjusting agents and pH buffers including organic and inorganic salts, optical brighteners, opacifying agents, hydrotropes, antifoaming agents, enzymes, anti-spotting agents, anti-oxidants, preservatives, and anti-corrosion agents;

wherein said composition contains no more than 20%wt. water into an amount of water within a container, and allowing the container to dissolve.

18. A process for treating a hard surface wherein the presence of undesired microorganisms e.g, gram positive pathogenic bacteria such as *Staphylococcus aureus,* and/or gram negative pathogenic bacteria such as *Salmonella choleraesuis* and/or *Pseudomonas aeruginosa,* are suspected, comprising the process steps of:

placing a water soluble container containing a composition comprising:

(a) 0.01 to 20%wt. of at least one cationic surfactant having germicidal properties;

(b) at least one non-ionic surfactant;

(c) at least one organic solvent having a solubility in water of at least 4%wt.;

(d) optionally, at least one alkanolamine;

(e) optionally, at least one polyethylene glycol; and

(f) optionally, up to about 10% wt. of one or more conventional additives selected from coloring agents, fragrances and fragrance solubilizers, viscosity modifying agents, other surfactants, other antimicrobial/germicidal agents, pH adjusting agents and pH buffers including organic and inorganic salts, optical brighteners, opacifying agents, hydrotropes, antifoaming agents, enzymes, anti-spotting agents, anti-oxidants, preservatives, and anti-corrosion agents;

wherein said composition contains no more than 20%wt. water into a quantity of water;

allowing the water soluble container to dissolve in the water to form a dilute treatment composition;

and, applying an effective amount of the diluted treatment composition to the surface in need of treatment in order to provide sanitizing or disinfecting effect thereto.

Statement under Article 19(1)

Prior art document US 6136776 teaches and exemplifies quaternary ammonium compounds which are necessarily present in the concentrate compositions in amounts of 55%wt. – 75%wt. (See column 2, lines 37 – 39.) Also, see Example 15 which comprises 63.5%wt. of a quaternary ammonium compound, BTC-888®. Thus, according to US 6136776 when a germicidal quaternary ammonium compound is present it is present in an amount of at least 55%wt.

The presently claimed invention requires a lower amount, viz., to 20%wt. of a germicidal quaternary ammonium compound.